# FORCEnet Triad Brief
# Acquisition

*Transforming Information Into Combat Power*

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**Statement A: Approved for public release; Distribution is unlimited.**

Transforming Information Into Combat Power

# It's the Law [and Policy as well]

- **Information Technology (IT) Management Reform Act [Clinger-Cohen] of 1996**
  - **Purpose: Streamline IT acquisitions and emphasize life cycle management of IT as a capital investment**

  **"…a sound and integrated information technology *architecture* to provide a *framework* for evolving…"**
- **ASN RDA FORCEnet Policy Memo dtd JUL 14 2005**

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# The Acquisition Challenge

- **How to build and deliver an "operational concept and architectural framework…"**

**1. Define the requirement**

**2. Apply Systems Engineering to meet the requirement**

**3. Use acquisition structures**

*Across SYSCOMS, PEO's, Commands and Agencies*

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# The Requirement (Vision)

# SITUATIONAL AWARENESS

- TOTAL BATTLESPACE AWARENESS
- =DYNAMIC REAL-TIME INTELLIGENCE
- SPACE ACCESS: TO ALL SATELLITE DATA AT UNIT LEVEL.
- INTELLIGENCE UPDATES REAL TIME ON AREA OF INTEREST"
  - Location of all ships, planes, subs (Friendly, neutral, enemy)
  - the real COP
    - MINE WARFARE INFO. PASSED DIRECTLY TO SHIP FROM DEPLOYED MMS UUV / UDT SUPPORT
    - SIAP

# QUALITY OF LIFE

- FUTURE PORT VISIT REQ. PASSED DIRECTLY TO HUSBANDING AGENT.
- PHONE • e-mail • Web
- PROVIDE QOL SERVICES TO CREW
  - Education
  - Entertainment
  - Personal Business
  - Medical
- Petty Officer completes Moving arrangements for Family while Deployed.
- CO UPDATES HIS CREW'S FAMILY MEMBERS AT HOME W/ "LIVE" TOWN HALL.

- Communicates Real time with Wife concerning Family Issues.
- LT Jones Participates in On-Line training w/his University Class by VTC.

- SAILOR PROFESSIONAL DEVELOPMENT & EDUCATION

COMMUNICATES
Petty Officer completes "Real-time" College Degree!
DISTANCE LEARNING

- Sailor marries Girlfriend over VTC while deployed.

# A DAY IN THE LIFE of FORCEnet

## SENSING & NETWORKING

- METOC
- NETTED SENSORS W/SHORE BASED ISR
- NETWORK DESIGNED SPECIFIC TO MISSION AT HAND — FOR "DOCTRINE STATEMENTS" AND NETWORK OBJECT DESIGN BASED ON OPERATIONAL CONCEPT.
- SENSOR INFO PASSED FROM A SUPPORTING SUBMARINE DOING ASW via UNDERWATER COMMUNICATIONS.
- CONTROL OF UCAV & LOITERING MUNITIONS
- CONTROL OF UAV TO ENABLE COMMS RELAY TO MC SUPPORT ASHORE.
- CONTROL OF PERSISTENT SENSORS OF UNATTENDED SENSORS.
- RADAR FREQS AUTOMATICALLY MODIFIED WHEN IN INTERFERENCE W/OTHER SHIPS.
- REAL TIME ENVIRONMENTAL SENSING/UPDATE — AIR · SURFACE · UNDER WATER · OVERLAND
- DISTRIBUTED SENSORS FOR "IN-SITU" BATTLE SPACE AWARENESS — UAV · UUV · USV · UGS
- LT TAKES CONTROL OF UCAV LAUNCHED FROM CVN and FLIES IT ON COMBAT MISSION. CVN TAKES CONTROL FOR LANDING.
- RADAR SWEEP CORRELATED TO OTHER SHIPS IN AOR TO SHOW REAL TIME COVERAGE TO ALL & FLEET CDR.

## SITUATIONAL AWARENESS

- TOTAL BATTLESPACE AWARENESS
- =DYNAMIC REAL-TIME INTELLIGENCE
- SPACE Access: TO ALL SATELLITE DATA AT UNIT LEVEL.
- INTELLIGENCE UPDATES REAL TIME ON AREA OF INTEREST"
  - Location of all ships, planes, subs (Friendly, neutral, enemy)
  - the real COP
- MINE WARFARE INFO. PASSED DIRECTLY TO SHIP FROM DEPLOYED MMS/UUV/UDT SUPPORT
- SIAP

## COMBAT SYSTEMS

- COMPOSE COMBAT IDENTIFICATION
- POWER PROJECTION ASHORE
- ORDINANCE CONTROL AND EXECUTION
- LT JONES FIRES HIS SM-2 MISSILE AT A TARGET DESIGNATED BY ARMY PATRIOT BATTERY OVER HORIZON
- INTEGRATED FIRE CONTROL
- IDC TRACKING ALL CONTACTS W/WEAPONS REACH VIA CEC, FC TRACK DATA ON ALL.
- AFTER COMPLETING A FIRE MISSION — A ORDER FOR INVENTORY REPLACEMENT IS AUTOMATICALLY PLACED TO SUPPLIER
- MARINE ON BEACH REQUESTS FIRE ON TARGET, INDICATES LOCATION OF TARGET & ID CORRECT DEVICE. SHIP RESPONDS W/FIRE.

## LOGISTICS

- MS "Issue" relayed to TAFS FOR NEXT ALONGSIDE AT TIME OF ISSUE.
- AUTOMATIC LOGISTICS PROGRAM NOTES EXPANDED AMMUNITION & STARTS PROCESS OF REORDERING RE-SUPPLY OF SHIP'S AMMUNITION
- SK³ SCANS RECEIPT OF PARTS FROM RECENT UNREP/LOG.REP. UPDATING SPCC DATABASES.
- AUTOMATED JUST-IN-TIME LOGISTICS
  - Mission & Campaign WAR GAMING
  - MISSION PLANNING and TOOLS!

## INFORMATION OPERATIONS

- PROVIDE IW INFO. EFFECTS
- RED ID PLAN DEV. WITH NON-KINETIC OPTIONS (UNIT/TACTICAL LEVEL)

## TRAINING AND EDUCATION

- DISTANCE SUPPORT & TRAINING
- FC2 COMPLETES FINAL COURSE IN MCSE CURRICULUM TAKES TEST, IMMEDIATE FEEDBACK SERVICE RECORDS CERT.
- FIRST PHD AWARDED! to DEPLOYED SAILOR VIA FORCEnet enabled VIRTUAL GRADUATE SCHOOL.

## NAVIGATION

- SAFE NAVIGATION
- NAVIGATION
  - Voyage Planning
  - Voyage Execution
- GPS ship track to continuous Launch Plan Updates

## SHORE CONTEXT

- CONUS
- FORCEnet SHORE
- REMOTE MAINTENANCE PERFORMED ON ON BOARD d'Bose by SYSCEN
- ITZ GOTTAHAVIT ORDERS NEW CIRCUIT BOARD VIA PDA AFTER BEING NOTIFIED VIA PDA OF DEGRADING CKT ON THE BOARD.

## QUALITY OF LIFE

- FUTURE PORT VISIT REQ. PASSED DIRECTLY TO HUSBAND/WIFE AGENT: PHONE · e-mail · Web
- PROVIDE QOL SERVICES TO CREW — Education · Personal Business · Entertainment · Medical
- CO UPDATES HIS CREW'S FAMILY MEMBERS AT HOME W/"LIVE" TOWN HALL.
- Petty Officer completes Moving arrangements for family while deployed.
- CONCERT TICKETS!
- SAILOR PROFESSIONAL DEVELOPMENT & EDUCATION
- Petty Officer completes "Real-time" College Degree! DISTANCE LEARNING
- "Virtual" College Training!! Real-time! On-line!
- Sailor marries Girlfriend over VTC while deployed.

## COMMAND & CONTROL

- JOINT INTEROPERABLE INFO. SHARING
- RECOMMENDED COURSE OF ACTION DECISION SUPPORT.
- TAILORABLE INFO. VISUALIZATION FOR DECISION MAKERS.
- MOBILE INTRA-SHIP COMMS. & DATA ACCESS
- SECURE & PROTECTED INFORMATION SHARING
- AUTOMATED NETWORK/COMMS CONFIGURATION
- CONTINUOUS COLLAB. WITH CSG/ESG PLATFORMS AND REACHBACK to CONUS GIRS. OF EXCELLENCE
  - Mission Planning
  - Adaptable LOA's
- REACH BACK FOR SYSTEMS OF SYSTEMS NODAL ANALYSIS OF ENEMY FOR MISSION ANALYSIS (ONA)
- 3D VTC WITH COMMANDERS TO DISCUSS "The Plan", CDR's Intent.
- LANGUAGE TRANSLATION
- ROBUST, FAULT TOLERANT COMMUNICATION
- COALITION INFORMATION EXCHANGE
- NODAL
- COALASIS
- COMMAND & CONTROL OF FORCES
- COALITION INFORMATION EXCHANGE

## OPERATIONAL MISSION PLANNING

- Mission Rehearsal via Distributed Scenario to CSG/ESG that provide SIM/STIM for all sensors with Interactive Opposition Forces.
- DISTRIBUTED TEAM & INDIVIDUAL TRAINING FOR A SINGLE SYSTEM FOR SYSTEMS PREPPING FOR MISSION.
- Mission Planning Sw with Joint Capability objects which can be shared, evaluated and collaborated with for COA Development.
- Composable Planning tool used by UN FOR COORDINATION OF HUMANITARIAN RELIEF INTERVENTION

## INNOVATION & EXPERIMENTATION

- FORCEnet/Experimentation Grid enables rapid communication & COLLABORATION of Ship/Shipboard Personnel and Shore/based FORCEnet, ONR, NPS, SPAWAR Players.

## MEDICAL

- TRAUMA VICTIM'S LIFE SAVED THROUGH FORCEnet ENABLED MEDICAL CONSULTATION SYSTEM.
- TELE-MEDICINE

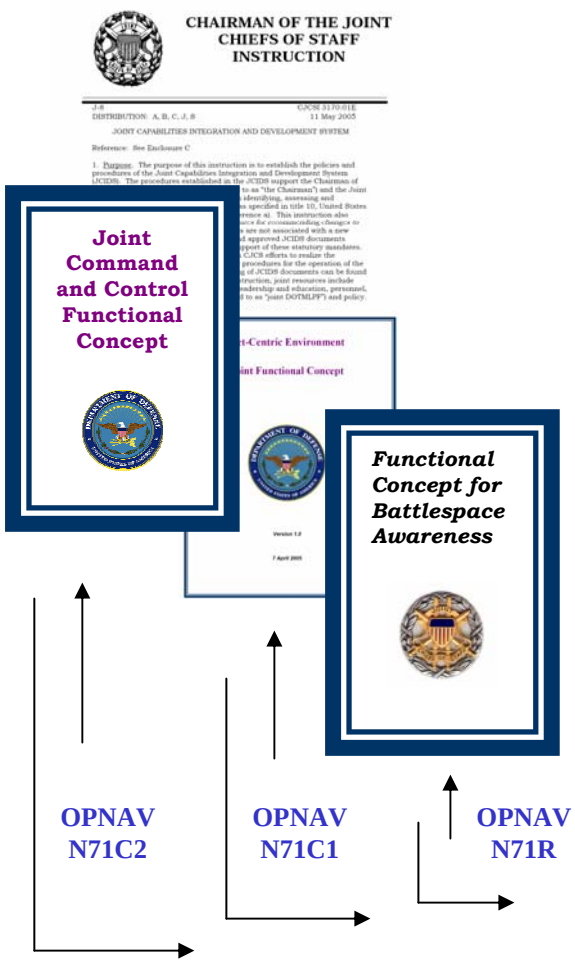
- Communicates Real time with Wife concerning Family Issues.
- LT Jones Participates in On-Line training w/his University Class by VTC.

# Concept to Capability

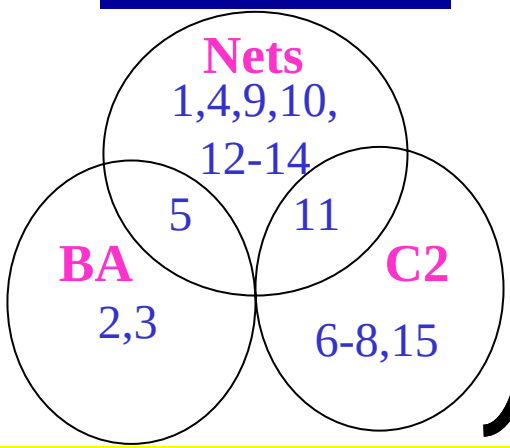
**Joint Capabilities Integration and Development System**

**FORCEnet Functional Concept**

**Naval Capabilities Development Process**



**FORCEnet Capabilities (15)**




**COTP MCP**

**~ 34 Tasks**

**Nets MCP**

**~ 32 Tasks**

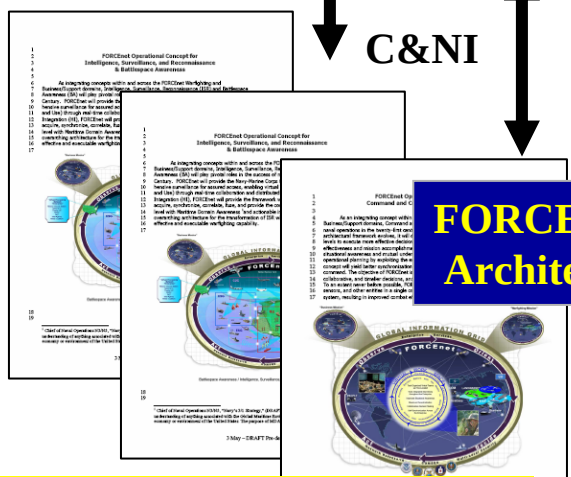
**ISR MCP**

**~ 14 Tasks**

**C2/DS**

**C&NI**

**BA/ISR**



**FORCEnet OV Architectures**

*Uses Joint tasks and attributes to inform decompostion*

# FORCEnet Data Taxonomy

SE Process

Fn Impl. Tool Suite

Requirements Analysis

System Analysis/Control

Requirements Loop

Functional Analysis/Allocation

Design Loop

Verification

Synthesis

OV-1

Capability

OV-5

Activity

SV-5

Function

SV-4

TV-1

TV-2

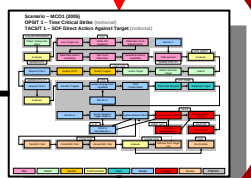
Standards

SV-9

OV-6c

SV-10c

Mission Thread



DOTLPF

Modeling

System

SoS / FoS

SV-8

SV-6

IERs

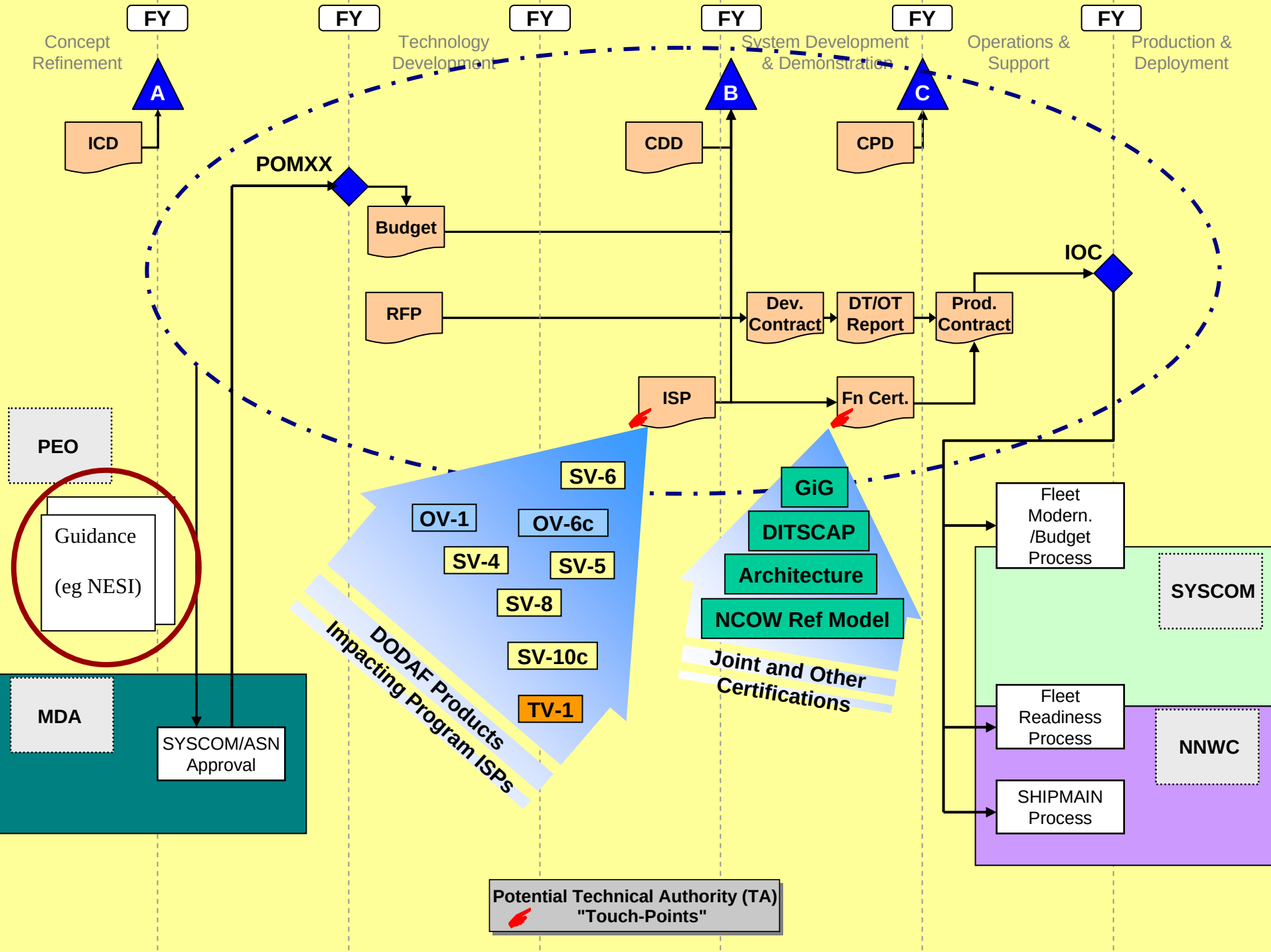
MOPs

Performance Metrics

MOEs

Schedule & Cost

PEO Stuff


FY
FY
FY
FY
FY
FY
Concept Refinement
Technology Development
System Development & Demonstration
Operations & Support
Production & Deployment
A
B
C
ICD
CDD
CPD
POMXX
Budget
RFP
Dev. Contract
DT/OT Report
Prod. Contract
IOC
ISP
Fn Cert.
PEO
Guidance
(eg NESI)
MDA
SYSCOM/ASN Approval
SV-6
OV-1
OV-6c
SV-4
SV-5
SV-8
SV-10c
TV-1
DODAF Products Impacting Program ISPs
GiG
DITSCAP
Architecture
NCOW Ref Model
Joint and Other Certifications
Fleet Modern. /Budget Process
SYSCOM
Fleet Readiness Process
NNWC
SHIPMAIN Process
Potential Technical Authority (TA) "Touch-Points"

# *Why Collect Data?*
# Analysis Focus

CAPABILITY-BASED ANALYSIS FOR FUNDING DECISIONS

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## Major Campaign Plan
(eg "Fight the war in [country X]")

1 to Many

*Campaign consists of Many types of operations*

## Major Combat Operations
(eg "Conduct Assault against [Y]")

Many to Many

*Each Operation uses many capabilities, and some Capabilities are used for multiple Combat Operations*

## Operational Capabilities
(eg "Plan/Coordinate with NCA", "Provide Force Protection")

Many to Many

*Etc.*

## Missions
(eg "Conduct Theater Air Defense")

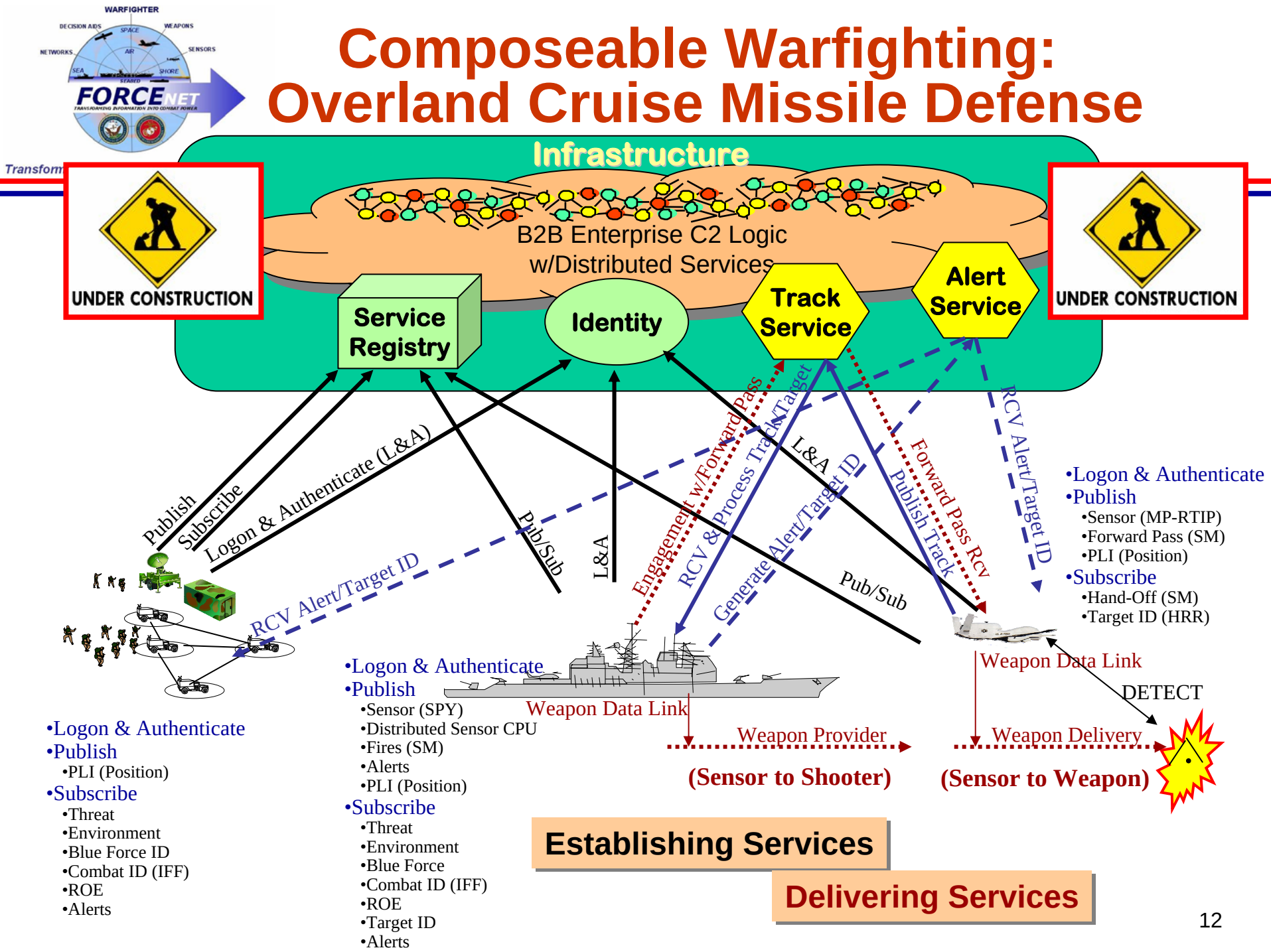
Many to Many

*Etc.*

## Mission Threads
(eg "Strike a Time-sensitive Target")

**Achievable Program-level Analysis**

# Composeable Warfighting: Overland Cruise Missile Defense



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# Other FORCEnet Examples

- **HM&E: Missile inbound sensed, automatic watertight door closure commences, Fuel Storage System transfer pumps stop/valves close, Ventilation System sets condition Zebra**
- **Aviation: FAC on ground sharing terminal display with A/C, pointers to confirm target**
- **Medical: Automated query of personnel databases to identify biological agent vulnerabilities by person/unit in theater including Reserves/National Guard**

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# FORCEnet Organization and Guidance

## Acquisition Commands

## FORCEnet Chief Engineer/SPAWAR Guidance

# Acquisition Roles

## FORCEnet Engineering Authority

[ ASN RDA CHENG Integration and Interoperability Management Plan Ongoing Work ]

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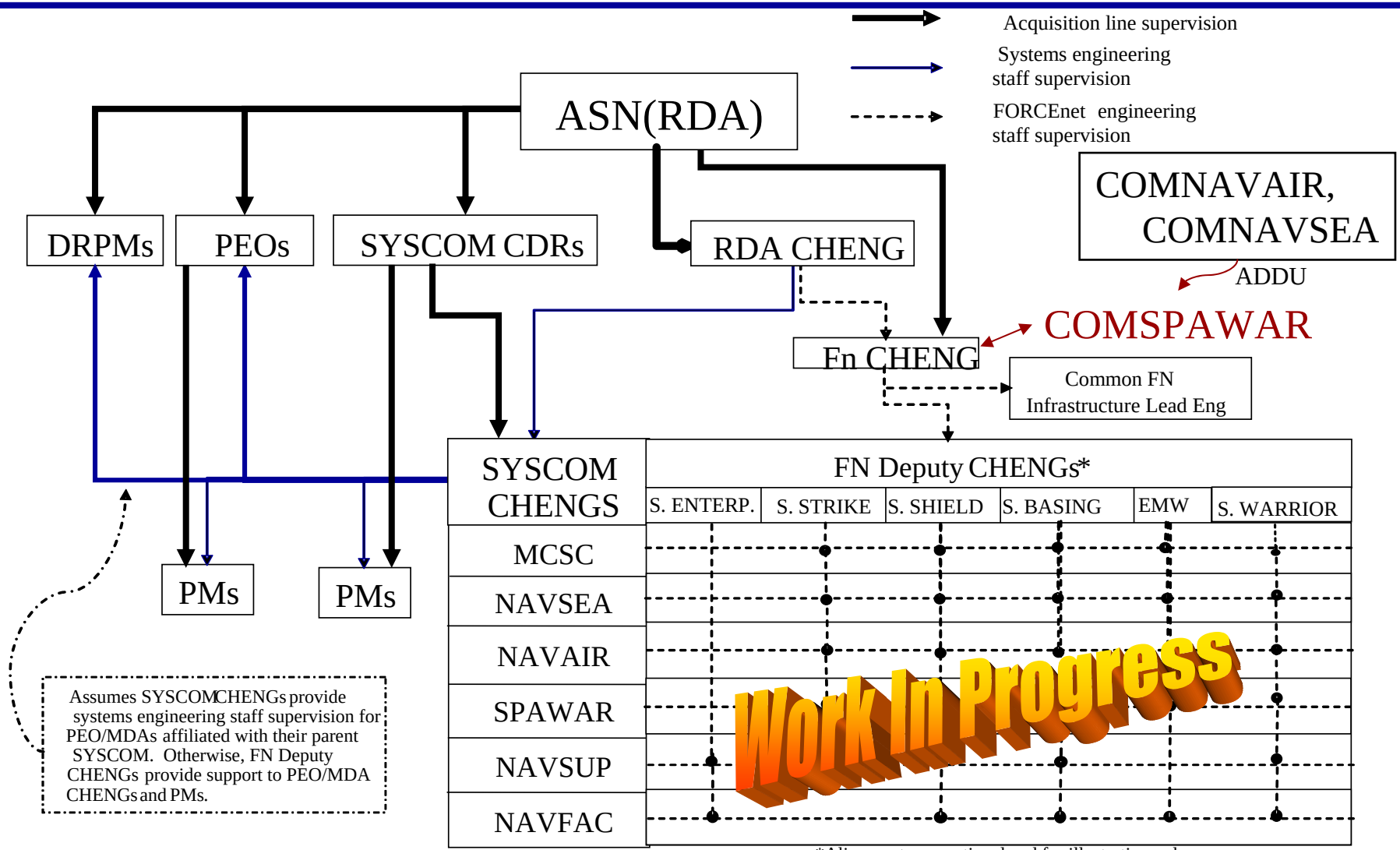


*Alignments are notional and for illustration only.

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# FORCEnet CHENG Responsibilities [ASN RDA Memo]

a. Provide Overall FORCEnet Technical Guidance
b. Develop Integrated Architecture (SV/TV)
c. Manage FORCEnet Data Base
d. Lead Fn/C4I Virtual SYSCOM
e. Participate in I & I Management Plan Development
f. Leads I & I Validation of FORCEnet FoS
g. Coord Acq Community FORCEnet Experimentation
h. Integrate with GIG/Multinational Architectures
i. Lead FORCEnet Outreach in Industry Forums
j. Serve As FORCEnet Technical Authority
k. Guide/Support/Oversee FORCEnet Test & Cert
l. Coordinate Development of Common Data Model

# FORCEnet Technical Reference Guide

A

## FORCEnet
## Technical Reference Guide
## for Program Managers

**Office of the FORCEnet Chief Engineer**
**SPAWAR 05**

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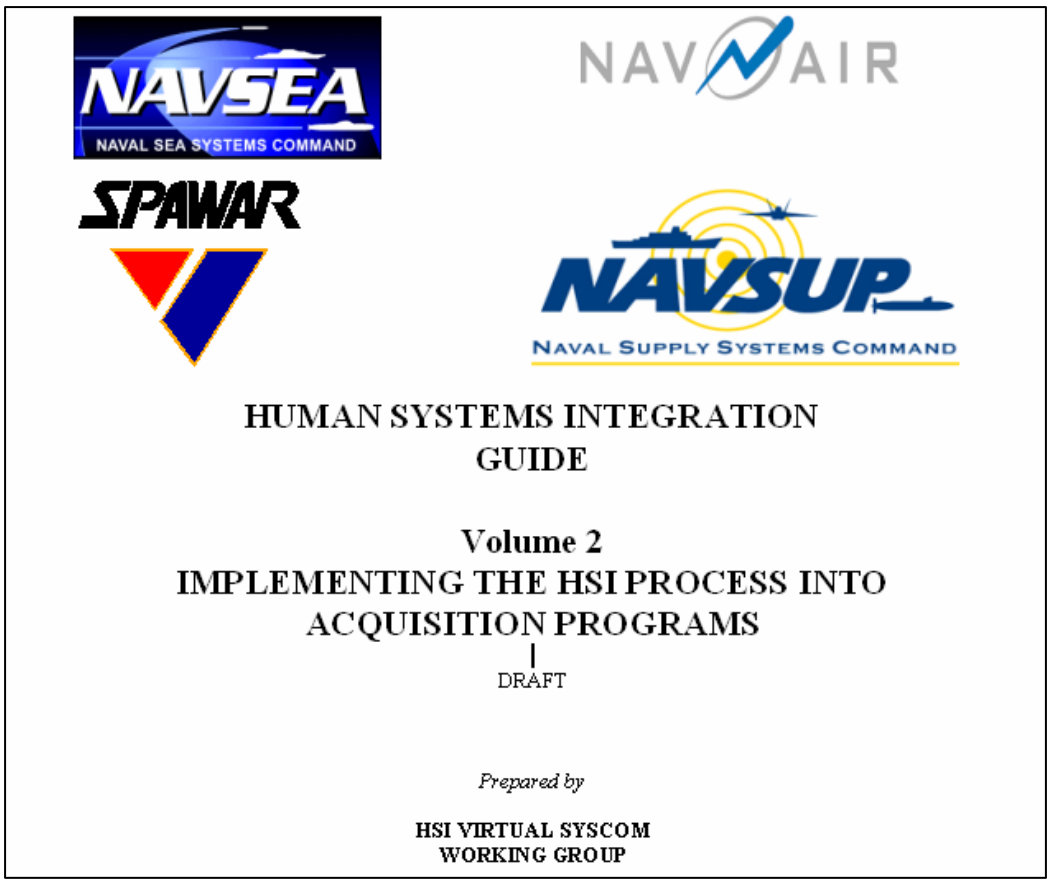
Version 1.0
JUN 2005

# Human Systems Integration Guidance

A



NAVSEA
NAVAL SEA SYSTEMS COMMAND

NAVAIR

SPAWAR

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND

HUMAN SYSTEMS INTEGRATION
GUIDE

Volume 2
IMPLEMENTING THE HSI PROCESS INTO
ACQUISITION PROGRAMS

DRAFT

*Prepared by*

HSI VIRTUAL SYSCOM
WORKING GROUP

# Architecture and Standards

Transforming Information Into Combat Power

B

## FORCEnet Architecture & Standards Volume I

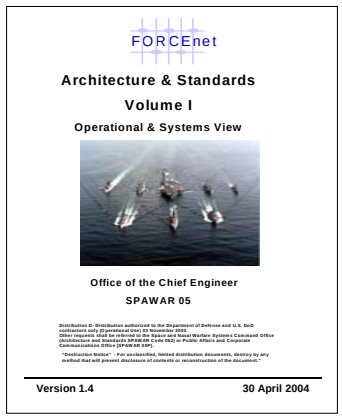
**Table of Contents:**


1.0 FORCEnet Definition
- **1.1 FORCEnet Objective-Transformation**
- **1.2 Architecture Overview**

2.0 Background
- **2.1 Sea Power 21 Pillars**
- **2.2 FORCEnet Precepts**
- **2.3 FORCEnet Architectural Scope**
- **2.4 FORCEnet Development Process**
- **2.5 FORCEnet Architecture Approach**

3.0 FORCEnet Requirements
- **3.1 Operational View (OV-1)**
- **3.2 Initial Capabilities Document (ICD)**
- **3.3 Fleet Capability Needs**

4.0 FORCEnet Drivers
- **4.1 DoD Drivers**
- **4.2 Naval**
- **4.3 Commercial Technology Update**
- **4.4 Allied/Coalition Interoperability**


## FORCEnet Architecture & Standards Volume I (Cont)


5.0 FORCEnet Functional Architecture
- **5.1 DoD Architecture Framework Document**
- **5.2 Mission Capability Packages**
- **5.3 Communications and Networks**
- **5.4 Intelligence, Surveillance, and Reconnaissance (ISR)**
- **5.5 Distributed Services, Common Operational and Tactical**

6.0 Implementation Reference Mission
- **6.1 SEA STRIKE**
- **6.2 SEA SHIELD**
- **6.3 SEA BASE**
- **6.4 FORCEnet**

Appendices

| | |
|---|---|
| **Appendix A** | **AV-1** |
| **Appendix B** | **ICD – FORCEnet Capabilities** |
| **Appendix C** | **FORCEnet Service Category Definitions** |
| **Appendix D** | **Allied and Coalition FORCEnet Architecture** |
| **Appendix E** | **Human Systems Integration** |
| **Appendix F** | **FORCEnet System Descriptions** |
| **Appendix G** | **SP-21 Pillar POR Standards Compliance** |
| **Appendix H** | **List of Acronyms** |
| **Appendix I** | **References** |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## FORCEnet Architecture & Standards Volume II

**Table of Contents:**


1.0 Executive Summary
- **1.1 FORCEnet Standards**
- **1.2 Introduction**

2.0 Information processing Standards and Definitions
- **2.1 Introduction**
- **2.2 Data Formats**
- **2.3 Sensor Systems Interface Standards**
- **2.4 Precision Navigation and Time (PNT)**
- **2.5 Human Systems Integration Standards (HSI)**
- **2.6 Information Assurance Standards**
- **2.7 Information Transfer Standards**
- **2.8 Information Modeling, Metadata and Information Exchange Standards**
- **2.9 Unique ISR Standards**

Appendices:
- **Appendix A List of Acronyms**
- **Appendix B Standards Specs and Reference Docs**
- **Appendix C EMC/EME Guidance**
- **Appendix D FORCEnet Standards Comparison**
- **Appendix E Distributed Services Profile**
- **Appendix F FORCEnet Comms and Net Profile**
- **Appendix G Allied and Interoperability Compliance Profile**
- **Appendix H ISR Compliance Profile**
- **Appendix I Node Information Services**
- **Appendix J Net-Centric Enterprise Solutions for Interoperability (NESI)**

## Other Levels of Guidance

NESI (PEO C4I&S/USAF)

OA (PEO IWS)

CAI (NSSO)

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# Data: The FORCEnet Implementation Baseline (FIBL)

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C,L

- **Will Become Complete Inventory/"Library" of All Programs in the FORCEnet Master Systems List**
- **Contains System/Program Details, Current and Future FORCEnet Implementation Plans**
- **Data Could be Filtered to Identify Dependencies and Intersection Points Between Systems/ Programs for Maximum Leverage**

*FORCEnet Implementation Baseline Is the Initial Collaborative Effort to Provide an Enterprise Perspective of Programmatic and Technical System Data brought together from a federation of repositories into a single view With Tools for Analysis*

# FITS / FIBL IPT

## FORCEnet Implementation Tool Suite/ FORCEnet Implementation Baseline

C,L

### Confirmed IPT Members

- OPNAV N71 -- NNWC
- NAVAIR 4.1.1 -- PEO W
- PEO LM&W --PEO C4I & Space
- SPAWAR 05 -- PEO Space Systems
- Negotiating with MOD UK

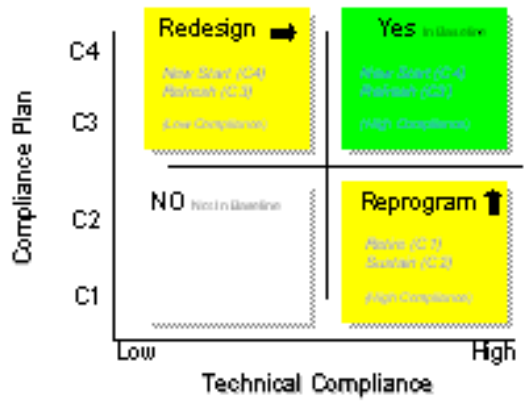
- **Initial Governance Issues**
  - Registration, Role, and Access Approval
  - FRVB (FITS Requirements Validation Board)
  - Compliance Criteria
  - Roles and Responsibilities within the Requirements Process
  - Approval Authority

POC: Dan Green (dan.green@navy.mil)

# Data Work Efforts

C,L

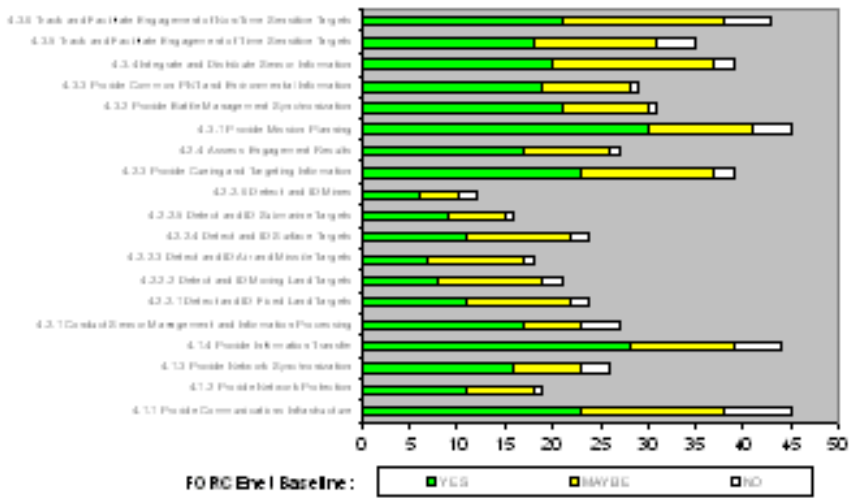
## Defining The FORCEnet Baseline




## FORCEnet Technical Compliance Categories

- **CAT 1: Non-compliant (Retire):**
  - Programs That Do Not Exhibit Net-centric Capabilities, Are Not Deemed Essential for Continued Operations or Business Processes of the Department, and Will Be Planned for Termination
- **CAT 2: Legacy Being Sustained (Retain):**
  - Current Programs That Do Not Exhibit Net-centric Capabilities and Are Not Planned for Transformation, but Are Essential for Current Operations and Business Process Needs of the Department
- **CAT 3: Legacy Being Transformed (Retired):**
  - Current Programs That Have an Approved Plan to Comply With Net-centric Capabilities and Domain Requirements of the Department
- **CAT 4: New Start in Development:**
  - Programs Are Born Net-centric and Meet Domain Requirements. They Exhibit All the Capabilities Needed to Ensure Compliance With DoD Net-centric Domain Models and Regulations

## Functional Gaps and Overlaps



# Experiments

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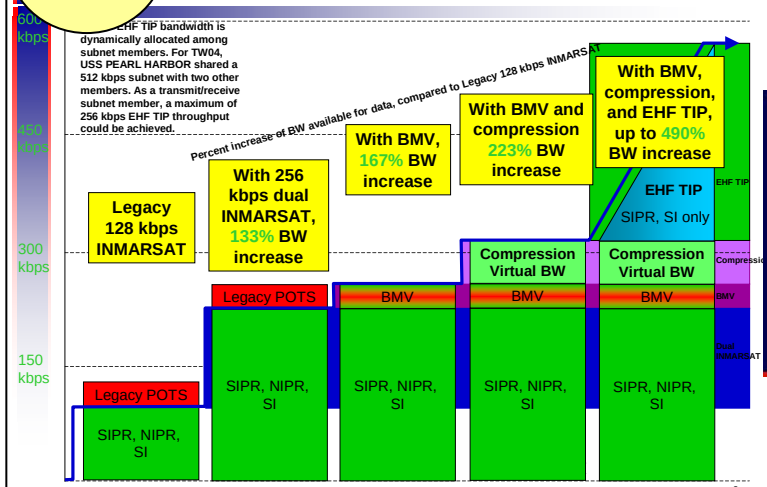
G

## TW04 Unit Level Ship BW Improvements for Data

FORCEnet




Trident Warrior

## Trident Warrior 05 Allied/Coalition Operations

SPAWAR

FORCEnet

### Initiatives

- CFMCC SOP for Split staff operations
- Fnet support of Sea Strike
- Collaborative Information Environment
- Cross Domain Solutions
- Multi-Level Thin Client
- AUSCANNZUKUS Participation and CWID Technology Transition

### Overview

- COMSECONDFLT Sponsorship
- Execution in December 2005 off the US East Coast
- IWI JIMA Expeditionary Strike Group
- Distributed Command Environment

### Schedule

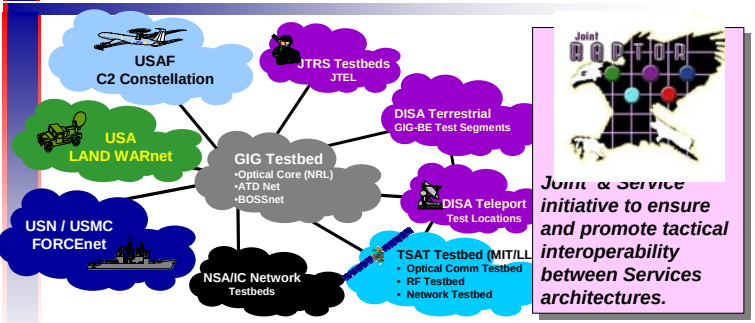
- Technology Conference Aug 04
- IPC December 04
- MPC May 05
- LOE July 05
- FPC October 05
- Execution December 05

- 9 -

## Joint Rapid Architecture Experimentation (JRAE)

SPAWAR

FORCEnet




**Joint RAPTOR 04-1 – Joint Distributed Services (Mar 04)**

**Joint RAPTOR 04-2 – Joint Tactical Situational Awareness (May/June 04)**

**Joint RAPTOR 04-3 – JEFX Air Force/Army Event (Aug 04) (Close Air Support, Blue Force Tracking)**

Joint RAPTOR 04-4 – GIG Transformation / Transition (Aug 04)

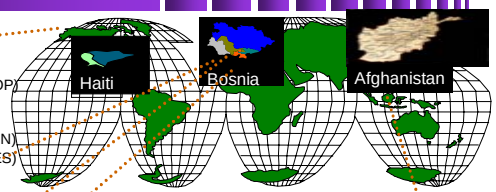
Joint RAPTOR 04-5 – TST Inter-Service Interoperability (TST-PE SIMEX 04-02)(May 04)

JRAE

JWID/CWID

UNCLASSIFIED

## JWID Accomplishments




**JWID 1994**
- **Common Operational Picture** (COP)
- All Source Analysis System (ASAS)
- Tactical Packet Networks (TPN)
- Network Encryption Systems (NES)
- Asynchronous Transfer Mode switches and routers
- MLS+ Server PACOM

**JWID 1995**
- Collaborative Contingency Targeting
- CTAPS (USAF)
- Global Broadcasting System
- Theater Deployable Comms (USAF)
- MLS+ Server ACOM

**JWID 1996**
- Joint Total Asset Visibility (JTAV)
- COMPASS,
- GCCS COE Validation

**JWID 1997-1998 "Gold Nuggets"**
- GN -- Common Operational Modeling, Planning, & Simulation Strategy (COMPASS)
- GN -- Increased Compression Engine (ICE)
- GN -- **Radiant Mercury Imagery Guard (RMIG)**

**JWID 1999-R**
- **CWAN transition to CFBLNET**
- COP Interface eXchange (CIX),
- eXtensible Markup Language (XML) viewing of ATO

**JWID 2000-2001**
- **Defense Collaborative Tool Set (DCTS)**
- Coalition Portals for Imagery and Geospatial Services (CPIGS)
- Defense Message System (DMS)
- GN-- Silent Runner/GN -- PATROL

**JWID 2002**
- Comprehensive Assessment Methodology
- Coalition Vulnerability Analysis Team (CVAT)
- Language Translation services

**JWID 2003**
- Coalition Blue Force Tracking
- Bi-Directional Language Translation
- PKI Express
- Expand Networks

# FORCEnet Implementation

## Roadmap efforts (Example)

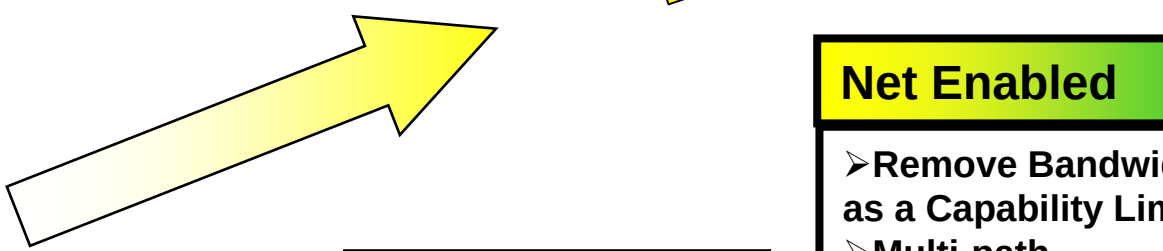
## Fielding Plans (Example)

# NCW Ready Improvement Opportunities

Level 1 | Level 2 | Level 3

| TIME | FY 04 | FY 05 | FY 06 | FY 07 | FY 08 | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | FY 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CONSTELLATIONS** | | | | | | | | | | | |
| DSCS (SLEP) | DSCS End-of-Life | | | | | | | | | | |
| WGS | ▲ | ▲ | ▲ | | ▲ | | ▲ | | | | |
| AEHF | | | | | ▲ | ▲ | ▲ | | | | |
| MUOS | | | | | | | ▲ | ▲ | ▲ | ▲ | ▲ |
| T-SAT | | | | | | | | ▲ | ▲ | ▲ | ▲ |
| Commercial | | | | | | | | | | | |
| **FORCING FUNCTIONS** | | | | | | | | | | | |
| DoD IPV6 Goal | | IPV4 Transition to IPV6 | | | 100% IPV6 | | | | | | |
| Teleport Transition to IP | | | 25% | | 50% | | 75% | | 100% | | |
| Teleport Enabling Services: | DBA, QoS, Self-Managed Networks | | | | | | | | | | |
| GIG-BE (terrestrial comms) | Optical Mesh IP Network | | | | | | Integrated GIG | | | | |
| HAIPE (high-speed encryption) | | | HAIPE 1.0 | | | | HAIPE 2.0 | | | | |
| TC QoS, NAF & PCF | | | | Quality of Service, Network Access Functions & Policy Control Functions | | | | | | | |
| TC Terminal | | | | | Start Fielding TC Terminals | | | | | | |
| JTRS WNW MUOS | | | | WNW Surrogate | | | ▲ | WNW Spiral 1 | | | |
| NCES/JC2 | | | | NCES Block 1 | | | NCES Block 2 | | | NCES Block 3 | |

# Capability Stepping Stones to Net Readiness



**Full IT21 – Online**

- IP Reach Back
- Local Area Ntwks
- Wideband Receive
- RF Management
- Survivable comms

**FORCEnet Level 0**

Today

**Net Connected**

- Initial Services Oriented Network Architecture
- Ruggedized Networks
- Double Bandwidth
- Improved Coalition Operations

**FORCEnet Level 1**

FY07

**Net Enabled**

- Remove Bandwidth as a Capability Limit
- Multi-path Transport
- Improved Bandwidth Mgmt
- Redundant Paths
- Applications Migrating to Network
- Common Enterprise Infrastructure

**FORCEnet Level 2**

FY10

**Fully Net Ready**

- Remove Bandwidth as a Capability Limit
- Multi-path Transport
- Dynamic Bandwidth Mgmt
- Multi-National Information Sharing
- One Stop Information Shopping
- Information Provided to Operator is Relevant, Timely, Accurate, and Usable
- Redundant Paths
- Merged Networks

**FORCEnet Level 3**

FY14

*Transforming Information Into Combat Power*

# Summary

- **FORCEnet is firmly grounded in Naval Doctrine and Policy as well as Statutes**
- **FORCEnet is the Naval element of DoD's future vision**
- **FORCEnet encompasses all aspects of Naval Operations – afloat and ashore, tactical and non-tactical, seabed to space**
- **FORCEnet is evolutionary, but not a Program of Record; technically based, but not a specific technology**
- ***FORCEnet allows us to transform information into combat power***

*Transforming Information Into Combat Power*

# FORCEnet involvement

- **FORCEnet affects all of us**
  - **Operational aspects (how we do our mission)**
  - **Technical aspects (standards we must follow, design considerations)**
- **FORCEnet should shape your work**
  - **Align with the Operational Construct and Architectural Framework**
- **“Get into the arena”**